

## CLAIMS

1-9. (Canceled)

10. (Previously presented) A multi-parameter water quality monitoring system comprising:

a plurality of multi-parameter monitoring tools each configured to receive and electrically interconnect with a plurality of interchangeable sensor head components and to communicate over a communications network; and

a central controller connectable to the communications network, said central controller is configured to communicate with each of the multi-parameter monitoring tools, wherein the central controller includes functionality to receive configuration information for each of the plurality of interchangeable sensor head components interconnected with each of the plurality of tool assemblies and to extract operational information therefrom;

wherein each of the monitoring tool assemblies may be further configured to communicate directly with at least one other tool assembly over the communications network.

11. (Canceled)

12. (Previously presented) A multi-parameter water quality monitoring system comprising:

a plurality of multi-parameter monitoring tools each configured to receive and electrically interconnect with a plurality of interchangeable sensor head components and to communicate over a communications network; and

a central controller connectable to the communications network, said central controller is configured to communicate with each of the multi-parameter monitoring tools, wherein the

central controller includes functionality to receive configuration information for each of the plurality of interchangeable sensor head components interconnected with each of the plurality of tool assemblies and to extract operational information therefrom;

wherein the plurality of tool assemblies are located at a site remote from the central controller and connection to the communications network is provided through use of a modem/controller device.

13 (Original) The system of claim 12 wherein the modem/controller employed for communicating over the network includes the functionality to emulate at least one other system such that communications may be established with devices other than the central controller.

14. (Previously presented) A multi-parameter water quality monitoring system comprising:

a plurality of multi-parameter monitoring tools each configured to receive and electrically interconnect with a plurality of interchangeable sensor head components and to communicate over a communications network; and

a central controller connectable to the communications network, said central controller is configured to communicate with each of the multi-parameter monitoring tools, wherein the central controller includes functionality to receive configuration information for each of the plurality of interchangeable sensor head components interconnected with each of the plurality of tool assemblies and to extract operational information therefrom;

wherein the central controller comprises at least one of: a personal computer, a palm top computer, a well top device, and another tool assembly.

15. (Canceled)

16. (Previously presented) A multi-parameter water quality monitoring system

comprising:

a plurality of multi-parameter monitoring tools each configured to receive and electrically interconnect with a plurality of interchangeable sensor head components and to communicate over a communications network; and

a central controller connectable to the communications network, said central controller is configured to communicate with each of the multi-parameter monitoring tools, wherein the central controller includes functionality to receive configuration information for each of the plurality of interchangeable sensor head components interconnected with each of the plurality of tool assemblies and to extract operational information therefrom, wherein the central controller is further configured to detect each of the tool assemblies connected to the communications network, selectively access each of the one tool assemblies, and communicate with each of the tool assemblies so as to access, amend, and retrieve information stored in the accessed tool assembly, including data relating to each of the interchangeable sensor head components interconnected with the accessed tool assembly;

wherein the operational information includes identification for each of the interchangeable sensor head components interconnected with a particular one of the plurality of multi-parameter tool assemblies;

wherein the interchangeable sensor head components comprise at least one of: an interchangeable sensor and an accessory; and

wherein the central controller is further configured to generate and amend a test schedule for each of the interchangeable sensors in the tool assembly, and to further access and extract data stored in memory for monitoring processes performed by each of the interchangeable sensors in the tool assembly.

17. (Previously presented) A multi-parameter water quality monitoring system comprising:

a plurality of multi-parameter monitoring tools each configured to receive and electrically interconnect with a plurality of interchangeable sensor head components and to communicate over a communications network; and

a central controller connectable to the communications network, said central controller is configured to communicate with each of the multi-parameter monitoring tools, wherein the central controller includes functionality to receive configuration information for each of the plurality of interchangeable sensor head components interconnected with each of the plurality of tool assemblies and to extract operational information therefrom, wherein the central controller is further configured to detect each of the tool assemblies connected to the communications network, selectively access each of the one tool assemblies, and communicate with each of the tool assemblies so as to access, amend, and retrieve information stored in the accessed tool assembly, including data relating to each of the interchangeable sensor head components interconnected with the accessed tool assembly;

wherein the operational information includes identification for each of the interchangeable sensor head components interconnected with a particular one of the plurality of multi-parameter tool assemblies;

wherein the interchangeable sensor head components comprise at least one of: an interchangeable sensor and an accessory; and

wherein the central controller further comprises at least one user interface which is configured to display a plurality of screen displays which provide for the viewing and/or manual entry of information relating to the operations of the at least one tool assembly including the data

for each of the interchangeable sensor head components connected thereto user commands.

18. (Original) The system of claim 17 wherein the central controller is configured to perform at least one of:

- detecting whether the at least one tool assembly is connected to the network;

- detecting which of the interchangeable sensor head components is interconnected with the at least one tool assembly;

- presenting a first screen display which provides detail configuration for the at least one tool assembly connected to the communications network including the data for each of the interchangeable sensor head components connected thereto;

- presenting a second screen display which provides for manual entry of parameter information for each of the interchangeable sensors interconnected with the at least one tool assembly, wherein the entered parameter information is provided to the at least one tool assembly over the communications network; and

- presenting a third screen display for manual entry of testing information for each of the interchangeable sensors interconnected with the at least one tool assembly, wherein the entered test information may be provided to the at least one tool assembly over the communications network; and

- extracting and compiling test information for each of the interconnected interchangeable sensors from the at least tool assembly.

19-20. (Canceled)

21. (Previously presented) A multi-parameter water quality monitoring system comprising:

- a plurality of multi-parameter monitoring tools each configured to receive and electrically

interconnect with a plurality of interchangeable sensor head components and to communicate over a communications network; and

a central controller connectable to the communications network, said central controller is configured to communicate with each of the multi-parameter monitoring tools, wherein the central controller includes functionality to receive configuration information for each of the plurality of interchangeable sensor head components interconnected with each of the plurality of tool assemblies and to extract operational information therefrom.

wherein the central controller is further configured to detect each of the tool assemblies connected to the communications network, selectively access each of the one tool assemblies, and communicate with each of the tool assemblies so as to access, amend, and retrieve information stored in the accessed tool assembly, including data relating to each of the interchangeable sensor head components interconnected with the accessed tool assembly;

wherein the central controller is further configured to selectively address each of the tool assemblies by placement of a unique address header in a message generated for transmission over the communications network;

wherein the message may comprise firmware which the tool assembly may employ for upgrade and/or replacement purposes.